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Meeting for Business and Annual Meeting, Dec. 30, 1845.

VICE PRESIDENT MORTON in the Chair.

The Committee to whom was referred a paper by Dr. King, of Greensburg, Pennsylvania, read 16th inst., reported in favour of publication.

Description of Fossil Foot Prints.

BY ALFRED T. KING, M. D.

It is now more than a year since fossil foot prints were discovered in the sandstone of the coal measures in Westmoreland county, Pennsylvania. Since then, numerous localities have been observed, which contain well characterized impressions. Some of these are similar to, and a few identical with, those which I first described, but by far the greatest number are totally different from any which have heretofore been observed.

About three miles from this town, near the summit of the first anticlinal roll, west of Chesnut ridge, one of the principal axes of elevation belonging to the Alleghany range, in a coarse grained sandstone, are eight remarkable impressions, all having the same dimensions, the same distance apart, and forming a continuous series in a slightly bent line. Each is of an ovoidal form, 13 inches long, 9 broad, and from 3 to 6 deep. The impression is deep and ovoidal before, but superficial behind, as though made by an animal with a long and flexible pastern.

Twenty-seven miles from Greensburgh, on the summit of Chesnut ridge, in a coarse grained sandstone, are numerous imprints, as perfect as they are anomalous and remarkable. These imprints are of different kinds: the greatest number seem to have been made by *ruminant mammals*, as the feet were cleft so as to resemble those of the ox and deer, but much larger. They are of various sizes, and differ from most living types, in having two hind hoofs, which made deep and vivid impressions from one to two inches behind the main track.

The length of the largest, including the posterior imprints, is 9 inches, breadth $5\frac{1}{2}$ inches.

The smaller vary from $4\frac{1}{2}$ to $5\frac{1}{2}$ inches in length, by $2\frac{1}{2}$ to $4\frac{1}{2}$ in breadth. The general form of these foot marks is ovoidal, the largest portion being behind as well as the widest part of the

cleft. The posterior impressions are each about the size of a walnut. The interval between each foot mark is about $2\frac{1}{2}$ feet in the larger, and 18 inches in the smaller.

Besides these, and a few others which are identical or nearly so with some which I have already described on a former occasion, there are four or five huge imprints of a still more remarkable character than any that have heretofore met my eye. They are in a continuous line: each imprint is 13 inches long, and 9 wide. The toes, which are five in number, are thick and very perfect. Four of these imprints are quite perfect, others are less so, and many are nearly obliterated. The average distance between each impression is 3 feet 7 inches, with the exception of the last two, which are seven feet apart. This seems to indicate that there was once a track between these two, which has been defaced by the erosive action of the elements upon the rock during a series of ages.

The Committee on Mr. Edward Harris' description of a new species of *Parus* from Missouri, read at last meeting, reported in favour of publication.

Description of a new species of Parus from the Upper Missouri.

By EDWARD HARRIS.

Parus septentrionalis. Young, in summer plumage.

Bill brownish black, short and stout. Iris dark brown. Feet greyish blue. Upper part of the head, chin and foreneck dull black; the black of the head scarcely descending to the hindneck, and that on the foreneck hardly reaching to the breast. Cheeks and sides of the neck, a line running from the base of the bill under the eye and almost meeting on the hindneck, white. Back greyish, slightly tinged with yellow. Quills and tail feathers dark greyish brown, margined with pure white; secondaries conspicuously so. Lower parts greyish white with an almost imperceptible tinge of yellowish under the wings.

Length $5\frac{7}{8}$. Wing $2\frac{1}{16}$. Tail $3\frac{1}{16}$ inches.

A single specimen of this bird was procured on the 26th of July, on the Yellow Stone River, about thirty miles above its junction with the Missouri. It is evidently a bird of the season, with immature plumage, to which may be attributed the dulness of the black on the head and throat. On comparison of this bird with *P. Carolinensis* and *P. atricapillus*, it will be perceived that, beginning with the smallest bird, the parts which are black, de-

crease, and the white parts increase in size and intensity in ascending. In *septentrionalis* the outer web of the lateral tail feather is entirely white, except a small portion near the base, where there is a slight tinge of grey next the shaft, and the quills, secondaries and all the tail feathers are margined more broadly and with a purer white than in the other species.

I have given a table showing the comparative measurements of the three American species of this division of the genus *Parus* having black heads, which so closely resemble each other in voice, habits and markings; and have also added some measurements from a paper in the Archives of the Academy, by M. de Selys-Longchamps, Corresponding Member of the Royal Academy of Brussels, extracted from their Bulletin, vol. 10, No. 7. I have reduced his measurements to English inches and decimals, and have given my own also in decimals for more ready comparison. It will be seen that his specimen from Iceland (*frigoris*) corresponds so nearly with our *atricapillus* as to render it probable that it is identical, while his *atricapillus* from Brisson is so near to Audubon's *Carolinensis* as to render it almost certain that the description of *P. atricapillus* by the old authors was from our small southern bird. If this opinion be correct, our *Carolinensis* should resume the name of *atricapillus*, and the larger bird be called *frigoris*, as suggested by M. de Selys-Longchamps.

The note of this bird is similar to *atricapillus*, but its voice more liquid, and less harsh and querulous in the utterance. Bill longer and stouter.

	Length.	Wing.	Tail.	Length.	Wing.	Tail.
<i>Parus Carolinensis</i>	$4\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{8}$	or 4.250	2.500	2.375
" <i>atricapillus</i>	$5\frac{1}{8}$	$2\frac{11}{16}$	$2\frac{9}{16}$	5.125	2.687	2.562
" <i>septentrionalis</i> (Nob.)	$5\frac{7}{8}$	$2\frac{13}{16}$	$3\frac{1}{16}$	5.875	2.812	3.093
" <i>atricapillus</i> (Briss.)	} from the paper of M. de Selys-Longchamps.			4.794		2.397
" <i>frigoris</i>				5.149		2.663

It will be seen by the above table, that while in each of the old American species the *wing* is .125, or $\frac{1}{8}$ of an inch longer than the *tail*, in the new bird, the *tail* is .281, or nearly $\frac{3}{10}$ of an inch longer than the *wing*; compared with *atricapillus*, the total length is greater by $\frac{2}{4}$ of an inch, the wing by $\frac{1}{8}$, and tail by $\frac{8}{16}$ or more than half an inch.

The colours in this immature specimen are only to be depended upon as showing the much greater development of the white, and smaller extent of the black markings, than in the other species. For the sake of more easy reference, the description has been made parallel with those of Audubon in his Synopsis. I would propose as an appropriate English name for this bird, the "long-tailed black-cap Titmouse."

Descriptions of New Species of Coleoptera of the United States.

By F. E. MELSHEIMER, M. D.

(Continued from page 223.)

Lampyridæ, Latr.

LYGISTOPTERUS, Dej. Catal.

L. lateralis. Black; thorax with the lateral margins, and anterior lateral fourth of the elytra yellow.— $5\frac{1}{2}$ l. long; 2 l. wide. Pennsylvania.

Head small, black, produced anteriorly into a rostrum, which is more than half the length of the thorax: antennæ black, joints compressed, second small, subglobular, third slightly longer than the fourth: thorax subquadrate, wider at base than long, where it is nearly as wide as the base of the elytra; sides obtusely rounded before the middle, with the anterior margin strongly elevated and acutely rounded in the middle; black, with the lateral margins broadly yellow; disk slightly convex or carinate, with the lateral margins and posterior edge raised; hind angles prominent, acute; medial line faint: elytra black, with four longitudinally raised lines, interstices reticulate; sutural and lateral edges raised; anterior lateral fourth yellow; sides much inflexed anteriorly under the exterior line: beneath and feet black; pleuræ yellow. Sometimes the medial line is broad and distinct, particularly in small specimens.

DICTYOPTERUS, Latr.

D. sculptilis. Piceous; thorax with elevated lines, yellowish each side. Say, Boston Journ. Nat. Hist. Vol. 1, p. 158.

Var. Shoulders yellow, *Lycus axillaris*, Melsh. M.S.

D. canaliculatus. Black; thorax with a yellowish margin and an impressed line on the basal margin. Say, Boston Journ. Nat. Hist. Vol. 1, 154.

Var. Shoulders obsoletely rufous, *Lycus graculus*, M. S.

1. *D. floralis*. Black; lateral margins of the thorax broadly yellow. $2\frac{1}{2}$ l. long; 1 l. wide. Pennsylvania.

Black; head small; antennæ compressed, second joint small, third less than the fourth, which is slightly longer than the fifth: thorax subquadrate, as wide as the base of the elytra, wider behind than before, black, with the lateral margins broadly yellow and ordinarily elevated; anterior edge obtusely rounded, and fringed with short black hairs; posterior edge elevated; disk slightly unequal; a roundish impression in front of the scutellum; posterior angles excurved, deflexed, rather acute: elytra black, with longitudinal, slightly raised lines, and alternate obsolete ones; interstices with numerous transverse lines: beneath and feet black; pleuræ yellow. This may prove to be the *marginellus* of Fabricius, but the elytra are not sulcated, as is stated to be the case in that species.

2. *D. nanus*. Blackish; lateral margins of the thorax yellowish; elytra punctate-striate. 2 l. long; less than 1 l. wide. Pennsylvania.

Blackish, with a reddish-brown tinge: head piceous; antennæ —, thorax subquadrate, as wide as the base of the elytra, narrow before; black, with the lateral margins yellowish and ordinarily elevated; anterior margin raised and acutely rounded; disk slightly convex and unequal, with a short medial groove before

the posterior edge, which is raised : elytra punctate-striate, the interstices fine, convex and transversely rugose : beneath blackish ; feet dull brownish.

3. *D. trilineatus*. Black ; elytra with three longitudinal raised lines ; thorax with the anterior and lateral margins yellowish. 2 l. long ; less than 1 l. wide. Pennsylvania.

Black, with a reddish-brown tinge : head piceous ; mouth dull testaceous : antennæ blackish, not compressed, with three basal joints piceous, second joint half as long as the third, which is somewhat shorter than the fourth, the latter and fifth sub-equal : thorax as in the preceding species, but the anterior margin is also yellow, and the edge obtusely rounded ; the medial groove distinct and nearly entire : elytra black, with a tinge of reddish, and with the anterior lateral fourth obsoletely rufo-piceous ; each elytrum with three longitudinal raised lines ; lateral edges and suture raised ; beneath and feet blackish. The obtusely rounded anterior margin of the thorax, and the peculiar sculpture of the elytra, serve to distinguish this species from the preceding.

LYCHNURIS, Dej. Catal

L. morio. Black ; lateral thoracic margins dull testaceous ; elytra four-ribbed. $5\frac{1}{2}$ l. long ; 2 l. wide. Pennsylvania.

Black or black-brown ; antennæ compressed, black-brown, with the joints sub-equal : thorax inequal, or each side of the middle impressed ; triangular, with the sides slightly sinuated a little behind the apex, which is acutely rounded ; minutely and densely wrinkled, black, with the anterior and lateral margins dull testaceous : scutell acute-triangular : elytra finely granulate or shagreened with four or rather five longitudinal raised lines, which are more or less abbreviated before the apex : beneath and feet black, with the terminal ventral segment dull testaceous. Form and size of *Lampyris laticornis*, Fab., to which it is closely allied, but it differs from it in having the apex of the thorax more acutely rounded ; in the lateral margins being less broadly testaceous, the disk more inequal, and in the raised lines of the elytra being more distinctly defined.

ELLYCHNIA, Dej. Catal.

E. autumnalis. Black-brown ; sub-margins of the thorax whitish, with a rosaceous spot. $4\frac{1}{2}$ l. long ; 2 l. wide. Pennsylvania.

Lampyris autumnalis, Melsh. Catal.

Oblong-oval, black-brown ; antennæ moderately compressed, subfiliform, black, with the second joint about half as long as the third : thorax semioval, confertly and minutely wrinkled, with the disk suborbicular-convex, black, glossy ; sub-margins whitish, with an oblong rosaceous spot ; exterior margins black and not attaining the apex ; basal edge very slightly sinuate ; scutell glabrous ; elytra finely shagreened, with about three obsolete, longitudinal raised lines ; beneath and feet black ; pleuræ within the margins whitish, tinged with rosaceous. Bears a resemblance, in the dispositions of the colors of the thorax, to *Lampyris corrusca*, Fabr., but it can hardly be confounded with that species, as it is almost three times smaller, and has the elytral lines obsolete. It also resembles *L. nigricans*, Say, but apart of inferiority of size, it differs from that species in having the lateral thoracic margins exteriorly black, and the disk orbicular-con-

vex, while in *nigricans* the lateral thoracic margins are of one color, and the convexity of the disk triangular, the color of which does not attain the apex.

PYRATOMENA, Dej. Catal.

P. lucifera. Thorax yellowish, with the disk and a lateral abbreviated vitta, black; elytra brown, with the limb yellowish. $4\frac{1}{2}$ l. long; $1\frac{1}{2}$ l. wide. Pennsylvania.

Lampyris lucifera, Melsh. Catal.

Head testaceous, with the eyes black; antennæ brown, hirsute, two basal joints and base of the third yellowish or testaceous: thorax longer than wide, with the sides nearly rectilinear and parallel from the base to before the middle, thence to the apex strongly narrowed; apex acutely rounded; yellowish, tinged with rosaceous each side of the middle; a medial, anteriorly and posteriorly abbreviated vitta, and a short submarginal one, black: scutel testaceous, truncate at apex: elytra brown, obscurely two-ribbed, with the sutural and lateral margins testaceous: beneath brown, with the three terminal ventral segments yellowish: feet brown with the bases of the femora and tibiæ, testaceous. Resembles *L. centrata*, Say, from which, however, it is distinguishable by the outlines of the thorax.

2. *P. fenestralis*. Black; thorax each side of the middle with a rosaceous spot. $4\frac{1}{4}$ l. long; $1\frac{1}{2}$ l. wide. Pennsylvania.

Elongate, parallel, black or black-brown, opaque; antennæ compressed, black, with the second joint small, calathiform, third and fourth joints subequal: thorax semioval, black, with a large rosaceous spot each side of the middle; disk with two transverse ridges behind the middle, interrupted by the medial line; basal edge rectilinear between the hind angles; scutellum glossy, truncate at apex: elytra obscurely two-ribbed, finely shagreened: beneath and feet black; antepectus rosaceous within the lateral margins.

Telephoridæ.

TELEPHORUS, De Geer.

T. rufolus. Black; head, thorax, femora and sides and apex of abdomen rufous. $5\frac{1}{2}$ l. long; $1\frac{3}{4}$ l. wide. Pennsylvania.

Cantharis rubricollus, Melsh. Catal.

Head rufous, much contracted behind the eyes, rugosely punctured, deeply indented on the front, with the clypeus large, impunctured, shining; palpi and mandibles, testaceous, with the tips blackish; eyes prominent, black; antennæ simple, brown, with two basal joints and base of the following, rufous or testaceous, second and third joints subequal, shorter than the following ones: thorax rufous, transverse, with all the margins sub-angularly elevated; sides rounded; anterior edge straight, posterior one sinuate; disk longitudinally concave, with the medial line distinct; scutel rufous: elytra blackish, finely shagreened, obscurely two-ribbed: beneath blackish, with the antepectus, femora, sides and tip of the abdomen, rufous; claws bifid. It may be placed in the genus *Podabrus*, Fisch. It occurs in July, on the Water Lily.

2. *T. dubius*. Black; lateral margins of the thorax whitish; antennæ compressed. $3\frac{1}{2}$ l. long; $1\frac{1}{4}$ l. wide. Pennsylvania.

Black, shortly and finely blackish hirsute : head glossy black : mouth testaceous ; palpi dusky ; antennæ black, long, with the joints compressed, second joint very small, somewhat bowl-shaped, third and following joints subequal : thorax transverse, narrower before than behind ; anterior margin obtusely rounded ; sides straight, and each with a slight nick a little before the middle ; posterior edge slightly rounded, with the hind angles acute ; black, with the lateral margins whitish ; disk with about four obtuse elevations, glossy : scutellum glossy ; elytra shagreened, opaque, very obscurely three-ribbed : beneath and feet black ; nails simple ?

3. *T. rectus*. Black, parallel ; lateral margins yellowish. 3 l. long ; $\frac{2}{3}$ l. wide. Pennsylvania.

Black, finely black hirsute, narrow, parallel ; head black, with the mandibles testaceous ; antennæ simple, brown, basal joint dusky testaceous, second joint very small, subglobular, piceous, third and following joints equal : thorax transverse-subquadrate, nearly as wide as the elytra ; anterior edge with the angles obtusely rounded ; basal edge straight, with the angles acute ; sides feebly rounded ; blackish piceous, with the lateral margins whitish : elytra shagreened, glossy, with the sides parallel ; apex obtusely rounded : feet and beneath blackish ; pleuræ whitish. Allied to *Cantharis parallela*, Say.

MALTHINUS, Latr.

1. *M. serraticornis*. Black ; antennæ strongly serrated ; head testaceous. 2 l. long ; $\frac{3}{4}$ l. wide. Pennsylvania.

Cantharis serraticornis, Melsh. Catal.

Black : head rhomboidal, testaceous, with a black fascia between the eyes, which are black, prominent ; antennæ long, robust, strongly serrated, black ; palpi blackish : thorax, narrow, transverse, glossy, with the basal edge and hind angles obtusely rounded : anterior edge truncate : elytra abbreviated, dehiscent, rugulose, with a raised line in the middle ; wings black : beneath black, piceous : feet black.

2. *M. exilis*. Fuscous : thorax testaceous. $1\frac{1}{4}$ l. long ; $\frac{1}{3}$ l. wide. Pennsylvania.

Linear, slender, dark brown : head glossy-black ; mouth testaceous ; palpi testaceous, with the terminal joint dusky ; antennæ long, filiform, fuscous, with two basal joints testaceous, first joint long, clavate, second shorter than the third : thorax transverse, testaceous, margined, with the anterior and posterior edges obtusely rounded ; sides straight ; glossy : elytra abbreviated, gaping, fuscous, rugulose ; a small orbiculate glabrous spot at the tip of each : beneath brown, glossy ; tibiæ and tarsi dull testaceous.

Melyridæ.

MALACHIUS, Fabr.

M. minutus. Black ; head and thorax dull rufous ; feet dull testaceous. $\frac{2}{3}$ l. long. Pennsylvania.

Malachius minutus, Melsh. Catal.

Black, tinged with bluish : head rufous, dusky on the vertex, glossy : eyes black ; antennæ fuscous, with two basal joints testaceous : thorax rufous, glossy,

with a medial vitta dusky : elytra blackish, with a bluish, or brownish reflection : abdomen and postpectus blackish ; antepectus rufous : feet dull testaceous.

M. scincetus, Say. The larvæ of this species is occasionally very hurtful to the cultivated grape vine by destroying the cuticle of the leaves.

Cleridæ, Westw.

CYMATODERA, Hope.

C? *brunnea*. Fuscous ; antennæ, feet and abdomen dull rufous. $5\frac{1}{4}$ l. long ; $1\frac{1}{2}$ l. wide. Pennsylvania.

Brown, finely and shortly hirsute : head finely shagreened ; eyes large, transverse-sub-oval, deep black, feebly emarginate at the base of the antennæ ; palpi unequal, dull testaceous, labial with the terminal joint large, securiform, maxillary filiform, with the terminal joint truncate at tip ; mandibles black at tip ; antennæ simple, dull rufous, slightly thickened towards the tip, basal joint clavate, arcuated, following joints, except the terminal one, short, obconic, subequal, terminal joint as long as the two preceding ones united, slightly arcuated : thorax long, subcylindric, narrowed behind, with the sides obtusely indented before the hind angles ; slightly constricted behind the anterior margin ; posterior and anterior edges obsoletely piceous ; elytra strongly punctate-striate, punctures large, quadrate, the interstices narrow, glabrous : pectus piceous : abdomen and feet dull rufous ; posterior tibiæ armed at tip with a short spur ; posterior tarsi distinctly 5-jointed ; claws pectinate.

OPILUS, Latr.

1. *O. albofasciatus*. Blackish ; elytra with a common white fascia behind the middle. $2\frac{1}{4}$ l. long ; $\frac{1}{2}$ l. wide. Pennsylvania.

Clerus fasciatus, Melsh. Catal.

Black or dark brown, pilose, deeply punctured : head with the punctures on the front distant, on the vertex and sides crowded and rugose ; antennæ dusky yellowish, the three-jointed clava darker ; labrum and palpi dull rufous, the former emarginate, the latter unequal : eyes slightly emarginate at the base of the antennæ : thorax semielliptic, with the truncated part before ; rugose on the lateral margins, and with irregular series of profound punctures and inequalities on the disk ; elytra dark reddish-brown, punctate-striate, punctures large, profound and together with the striæ obsolete towards the apex ; sides parallel ; a common white fascia a little behind the middle : beneath blackish, deeply punctured ; feet dusky rufous or piceous ; posterior tarsi cryptopentamerous. It does not belong to the genus *Clerus*, and very probably neither to the present one or *Opilus*.

O? *distrophus*. Blackish ; elytra with a common white dentate fascia behind the middle, and an angular similarly colored line behind the base. Size somewhat less than the preceding species. Pennsylvania.

Clerus distrophus, Melsh. Catal.

Head black, tinged with rufous, scabrous or shagreened ; mouth testaceous ; antennæ testaceous, with the distinctly 3-jointed clava longer than joints 2-8 united ; palpi — ; thorax black, shagreened, wider in the middle than long, contracted at base, with the sides rounded : elytra very slightly widest behind

the middle; brown, tinged with red, deeply striate-punctate, punctures transverse, and continued to the apex; a common, dentate, white or yellowish fascia behind the middle, and an angular similarly colored line behind the base of each: beneath blackish: feet testaceous. As the eyes of this species are emarginated towards the front, it may belong to Spinola's division B or *Clairones Ichnoides*, but as the palpi and posterior feet of the only specimen in our collection are lost, it is placed provisionally in the present genus.

THANASIMUS, Latr.

1. *T. monilis*. Black, shining; thorax with the lateral margins rufous. 3 l. long; 1 l. wide. Pennsylvania.

Clerus monilis, M. Catal.

" *thoracicus*, "

Black, shining, sparsely hirsute: head minutely and distantly punctured, with an arcuated impressed line between the eyes, sometimes interrupted in the middle; clypeus and base of mandibles, reddish; labrum and tips of the latter, black; antennæ black, with the three joints of the clava distinct; palpi unequal; thorax longer than wide, contracted at base, with sides slightly rounded; an arcuated transverse impressed line behind the anterior margin, and a straight one on the hind margin; a small round indentation each side of the middle; black, with the lateral margins broadly yellowish-rufous; elytra feebly widest behind the middle; shagreened, subglabrous; beneath and feet black; antepectus rufous.

2. *T. bicolor*. Rufous; antennæ, feet and abdomen black; a white fascia on the middle of each elytrum. 4 l. long; 1½ l. wide. Alabama?

Yellowish-rufous, black hirsute, finely shagreened: eyes, antennæ, mouth and palpi, black: elytra each with a white transverse band behind the middle, edged with black and curving backwardly near the suture: abdomen and feet black. In the collection of Dr. Morris. Though I have met with no description of the present or preceding species, yet both are doubtless described. The former was questionably considered by Say as *Clerus thoracicus*, Oliv., but the description of that species by Olivier does not satisfactorily correspond with our *monilis*.

NECROBIA, Oliv.

- N. errans*. Blue, shining; antennæ and feet fuscous. 1½–2 l. long. Pennsylvania.

Dermestes violaceus, Melsh. Catal.

Blue, blackish hirsute: head with numerous profound punctures, with the mouth and palpi piceous; antennæ dark fuscous or blackish, piceous, with the terminal joint ashy-brown: thorax densely and deeply punctulate, with a very narrow impunctured medial space: elytra punctate-striate, punctures quadrate, and together with the striæ obsolete behind the middle, the interstices distantly and very finely punctured: abdomen dull steel-blue: feet fuscous, with a bluish reflection. Generically and specifically distinct from *Corynetes violaceus*, L.

ENOPLIUM, Latr.

- E. bimaculatum*. Thorax dull rufous; elytra blackish, with a lunate white spot near the middle. 4½ l. long; 1½ l. wide. Pennsylvania.

Hirsute : head dark, dull rufous, finely rugosely punctured, slightly indented between the eyes; antennæ dark rufo-piceous, clava —; labrum testaceous, emarginate; mandibles piceous; palpi —: thorax dusky rufous, edges blackish; semioval, rugosely punctured, clothed with rufous pile: elytra dark reddish-brown, densely and profoundly punctured on the anterior half, finely and transversely wrinkled towards the apex, and with obscure raised lines; a white curved band behind the middle of each elytrum, band dilated on the lateral margin; an obsolete, dusky spot on the shoulder: beneath brownish; feet chestnut-red; tarsi —

PTINIDÆ, Leach.

Ptilinus, Geoffr.

P. bicolor. Dull reddish; head and pectus black. $1\frac{1}{2}$ l. long. Pennsylvania.

Head blackish, opaque, minutely and densely wrinkled; antennæ, palpi and feet color of the elytra: thorax strongly convex, finely and not densely scabrous before the middle; dusky: elytra cylindric, dull reddish, with obscure numerous punctures, placed in irregular series: abdomen dusky: pectus blackish. A little larger than *pectinicornis*, Lin., which it much resembles.

PTINUS, Linn.

1. *Pt. 4-maculatus*. Dull rufous, with the antennæ and feet paler; a large black spot on each elytrum. $1\frac{1}{2}$ l. long. Pennsylvania.

Ptinus 4-maculatus, Melsh. Catal.

Oblong-ovate, dull rufous, yellowish-hirsute; head dark, with a longitudinal impressed line in the middle, and behind the eyes with a transverse band of long rufous pile; antennæ as long as the body, testaceous, with the joints elongated: thorax small, slender, strongly constricted before the base; elytra punctate-striate, each elytrum with a large black patch on the middle, hardly attaining the suture; frequently a small whitish spot at the hind edge of the black one, beneath dark reddish-brown: feet dull testaceous.

2. *Pt. frontalis*. Rufous; front and scutellum white pubescent. $1\frac{1}{2}$ l. long. Pennsylvania.

Rufous, hirsute: head whitish pubescent; antennæ as long as the body, with the joints elongate pale rufous: thorax slightly trituberculate: scutellum densely whitish pubescent: elytra dusky on the anterior half; punctate-striate, striae shallow: beneath and feet paler than above.

Pt. bimaculatus. Rufous; a subhumeral spot and pectus white. 1 l. long. Pennsylvania.

Ptinus bimaculatus, Melsh. Catal.

Ovate, dusky rufous, blackish hirsute: antennæ not as long as the body, with the joints short, obconic, rufous: thorax slightly tuberculate, and like the head rugosely punctured; elytra dusky on the anterior half, with a white pilose spot behind the humerus; punctate-striate: postpectus pilose: feet rufous.

LASIODERMA, Steph.

L. castaneum. Castaneous, yellowish pubescent. $1\frac{1}{2}$ l. long; $\frac{1}{2}$ l. wide. Pennsylvania.

Ovate, chestnut-red, clothed with a fine, dense yellowish pubescence: head large, with the clypeus broad, and obtusely rounded at apex; palpi small: antennæ pale testaceous, serrated from the third joint, second and third joint small: thorax and elytra impunctured, very minutely wrinkled: scutellum small triangular: feet short; tarsi short, pale testaceous: eyes black.

ANOBIIUM, Fabr.

1. *A. convexifrons*. Dull castaneous; front rather convex. 2 l. long; $\frac{3}{4}$ l. wide. Pennsylvania.

Dull chestnut-red, slightly pubescent, finely and densely shagreened: front rather convex; eyes black; antennæ rufous, with the basal joint glabrous, glossy: thorax slightly convex, each side of the middle at base with a slight fovea: elytra without striæ; feet dull rufous.

2. *A. sericans*. Blackish-brown, yellowish sericeous. 2 l. long; $\frac{3}{4}$ l. wide. Pennsylvania.

Anobium thoracicum, Melsh. Catal.

Black-brown, dull golden sericeous: head black, glossy, glabrous, much and very minutely punctured; antennæ dull rufous: thorax rather gibbous, minutely and somewhat rugosely punctured; each side of the middle towards the base with a small, round impression: a slight, elevated medial line: scutellum obtusely rounded at tip, somewhat unequal on the disk; elytra punctate-striate with the punctures transverse and profound: feet dusky rufous, with the tibiæ and tarsi paler. Bears some resemblance to *A. carinatum*, Say, but it is much more sericeous than that species, and the thorax is not carinate.

3. *A. obesum*. Brownish-red, finely pubescent. $1\frac{1}{2}$ l. long; $\frac{1}{2}$ l. wide. Pennsylvania.

Anobium villosum, Melsh. Catal.

Oblong, brownish-red, finely ashy-pubescent: head paler than the body, finely and profoundly punctured, with a few longitudinal rugæ near the inner margin of the eyes; antennæ color of the feet: thorax very minutely punctured, almost glabrous, anteriorly advanced, with the posterior half of the disk compressed each side: elytra finely punctate-striate: feet rufous or yellowish-rufous. Allied to *A. tenuistriatum*, Say.

4. *A. errans*. Dark rufous; thorax carinate behind. $1\frac{1}{2}$ -2 l. long; less than $\frac{1}{2}$ l. wide. Pennsylvania.

Anobium pertinax, Melsh. Catal.

Elongate, dull dark rufous: head very minutely wrinkled; eyes, and mandibles at tip, black; antennæ and palpi pale rufous: thorax very finely punctured and wrinkled, advanced posteriorly, with the basal edge, together with the hind angles and sides rounded; disk carinate towards the base; elytra punctate-striate, punctures transverse: beneath chestnut-brown, or brown-red; feet rufous. Closely allied to *A. pertinax*, Linn., and distinct from *A. carinatum*, Say, with which it was confounded.

OCHINA, Ziegl.

O¹ *nigra*. Black, hirsute; elytra punctate-striate.

Ptinus niger, Melsh. Catal.

Deep black, strongly blackish-hirsute: head sparsely punctate, with the clypeus obtusely rounded; antennæ approximating, two-thirds the length of the body, 11-jointed, moderately serrate, black, hirsute, with the first joint shorter than the fourth, clavate, second and third very small, subglobose, joints 4-10 equal, terminal joint longest, slender, acuminate at tip, three basal joints dull testaceous; palpi testaceous, filiform, terminal joints longest, slender, acutely pointed; labrum very narrow: thorax somewhat inequal, transverse, subcylindric, slightly wider at base, distantly and profoundly punctured: scutellum very small; elytra nearly twice as wide, and four times as long as the thorax; humeri somewhat prominent, thence to near the apex progressively narrowed; punctate-striate, with the punctures profound, close-set, the interstices fine; beneath and femora black; tibiae and tarsi brownish, the latter slender, with the second, third and fourth joints lobed beneath, claw-joint long, slender, armed with two fine, almost straight, nails.

HEDOBIA, Ziegl.

H? *humeralis*. Black; humerus, and middle of the thorax transversely fulvous; antennæ serrate. $2\frac{1}{2}$ l. long; l. wide. Pennsylvania.

Ptinus humeralis, Melsh. Catal.

Oblong, robust, black: head pendent, clothed with a dense white pubescence, clypeus sinuate at the base of the antennæ, dilated towards the tip, and there truncate and indented in the middle; labrum small, transverse-quadrate; eyes globular; antennæ not approximating, black, distinctly serrate, 11-jointed, rather more than half the length of the body, with the first joint short, clavate, second small, slightly triangular, joints 3-10 equal, terminal elongate, subcylindric, acuminate at apex; mandibles short, robust, black and acute at tips; palpi filiform, short, testaceous, with the terminal joints acute at the tip: thorax not wider than long, with the sides rounded; posterior edge straight, anterior edge rounded; disk unequal, carinated, clothed with fine pile; black, with the medial convexity triangularly ferruginous; each side of the middle towards the hind angles, with a small, obtuse, whitish tubercle: scutellum subtriangular, rounded at tip, white-pubescent: elytra rigid, nearly twice as wide as the thorax, with the sides parallel from the base to near the apex, which is obtusely rounded: above flattish, obscurely punctate-striate, interstices fine, faintly raised; humerus fulvous; each elytrum with an abbreviated whitish raised line, originating behind the humeral spot: venter and pectus convex, black, whitish sericeous; feet black, sparsely pubescent: tarsi short, with the four last joints dilated: nails fine, short and almost concealed. This insect is placed only provisionally in the present genus; it is probably referable to *Ptinidæ*, but scarcely to any of its present constructed genera. The same may be said of the preceding species or *Ochina nigra*.

Lymexylonidæ, Steph.

CUPES, Fabr.

C. *trilineata*. Pale ferruginous; elytra with three longitudinal raised lines 6 l. long; 2 l. wide. Pennsylvania.

Dull reddish-brown or ferruginous: head as large as the thorax, with the cra-

nium quadrituberculate, anterior tubercles more robust and obtuse than posterior ones; an entire, longitudinal, impressed line between the tubercles; posterior edge sinuate; surface densely yellowish-ashy pubescent; eyes large, globose, ashy-brown; antennæ long, and like the head densely pubescent; mandibles black; palpi testaceous: thorax small, about half as wide as the elytra, abruptly contracted before the middle, and there each side angularly prominent; pubescent; disk carinate, each side of the carina widely and deeply indented; anterior margin with four oblong impressions: scutellum small, subquadrate: elytra five times longer than the thorax, each with three longitudinal raised lines, of which the first and second became confluent a little before the apex, and the first and third are united still nearer to the tip, each line is distinctly alternated with brown and ferruginous, interstices cancellate; sutural and lateral edges raised: pectus and femora dark ferruginous; tibiæ and tarsi color of the elytra. *Cupes cinerea*, Say, Boston Journ. Nat. Hist. I, 168, and a species by the same name, page 169, appears to be distinct, the latter, if not the same, must be closely allied to the present species.

STATYRA, Latr.

S. ænea. Green; thorax oblong; elytra punctured; antennæ and palpi yellowish. *Lagria ænea*, Say, Appendix to the Narrative of an Exp. page 287.

Var. b. Black-greenish-brassy, robust. 6 l. long; 2 l. wide.

Var. c. Green, brilliant, very slender. 5 l. long; $1\frac{1}{4}$ l. wide. *Lagria viridis*, Melsh. Catal.

1. *S. resplendens*. Pale fuscous; thorax and feet yellowish; elytra punctate-striate. 3 l. long; 1 l. wide. Pennsylvania.

Lagria resplendens, Melsh. Catal.

Yellowish-brown: head piceous sparsely punctured, transversely indented between the antennæ, glabrous; labrum and palpi piceous; eyes approximating above and below, black, lunate, hollow side behind; antennæ brown; thorax subquadrate, truncate before and behind, slightly longer than wide, slightly wider before than behind, where the sides are obviously contracted, with the basal edge raised; yellowish, glossy, obsolete and remotely punctulate: scutellum small, subtriangular: elytra twice as wide as thorax, slightly widest behind the middle; shining, striate, striæ crenulate at the inner edge, interstices subconvex, impunctured: pectus yellowish: abdomen piceous: feet pale brown.

Var. a. Uniformly yellowish brown, with the eyes and feet as in the type. *Lagria fusca*, Melsh. Catal.

2. *S. gagatina*. Black, glossy; elytra punctate-striate. Size and form entirely of the preceding species. Pennsylvania.

Black, tinged with bluish, glossy: head as in the preceding, but distinctly distantly punctulate; eyes as in the preceding; clypeus, labrum, palpi, and two basal joints of the antennæ, piceous: thorax, apart of the color, as in the preceding, but less obscurely punctulate: elytra sculptured as in the preceding: beneath and feet blackish-piceous; tarsi dull testaceous or pale brown. This is perhaps also a variety of the preceding species.

MORDELLIDÆ, Leach.

Anaspis, Geoffr.

1. *A. dimidiata*. Head and thorax yellowish ; elytra, feet and abdomen fuscous. 1 l. long. Pennsylvania.

Head and thorax yellowish-rufous, very minutely punctured, finely pubescent ; antennæ and palpi color of the head : scutellum small, color of the elytra, which is mahogany-brown, punctured and pubescent as the thorax : abdomen color of the elytra ; postpectus blackish ; antepectus yellowish-rufous : feet dusky, dull testaceous, first pair clearer : eyes black.

2. *A. ventralis*. Yellowish-rufous ; abdomen fuscous. Size of the preceding. Pennsylvania.

Yellowish-rufous, sericeous : head and thorax very minutely punctured ; eyes and antennæ, excepting the three first joints, black : abdomen reddish-brown ; tarsi dusky.

3. *A. trifasciata*. Rufo-testaceous ; elytra with three black fasciæ. $1\frac{1}{3}$ – $1\frac{1}{2}$ l. long. Pennsylvania.

Yellowish-rufous above, sericeo-pubescent, impunctured ; antennæ color of the thorax, with the apical half blackish : scutellum color of the thorax : elytra with three common, blackish fasciæ, of which the first covers the scutellar region, the second occupies the middle, the third is apical ; the intermediate band is the broadest and rather the deepest colored : feet and pectus as above : abdomen dusky, with a middle space and apex obsoletely rufous : eyes black.

Var. a. As in the preceding, with the sutural and apical fasciæ obsolete, the intermediate one also lightly shaded ; abdomen rufous.

MORDELLA, Linn.

1. *M. sericans*. Dark rufous, golden sericeous. $4\frac{1}{4}$ l. long ; 1 1-3 l. wide. Pennsylvania.

Mordella sericea, Melsh. Catal.

Reddish-brown or dark rufous, with a slight bluish reflection, densely and very minutely punctured and transversely wrinkled, golden sericeo-pubescent : eyes dusky : antennæ and palpi yellowish-rufous : abdomen clearer than the elytra ; postpectus polished in the middle ; abdominal style robust, moderately elongated.

2. *M. marginata*. Black, varied with silvery sericeous spots. $1\frac{1}{2}$ –2 l. long. Pennsylvania.

Mordella marginata, Melsh. Catal.

Black, with numerous irregular whitish sericeous spots : antennæ serrate, black, with the four first joints dusky reddish-brown : thorax with all the margins, an entire longitudinal band each side of the middle, an abbreviated one towards the hind angles, and an irregular spot behind the anterior angles, silvery-sericeous ; all these markings distinctly visible in a certain light ; scutellum silvery-sericeous : elytra with the spots disposed into irregular fasciæ : feet and beneath black, the former with the posterior mar-

gins of the central segments, silvery-sericeous; abdominal style black, broadly silvery-sericeous at base.

3. *M. lineata*. Black; elytra with four narrow longitudinal ashy lines. $1\frac{1}{2}$ l. long.—Pennsylvania.

Mordella lineata, Melsh. Catal.

Black: antennæ black: thorax pictured as in the preceding species: scutel yellowish-sericeous: elytra with the sutural and lateral edges, and four longitudinal, posteriorly abbreviated lines, ashy or yellowish: beneath and feet black, ashy sericeous; abdominal segments as in the preceding species.

4. *M. atrata*. Black, immaculate, $1\frac{1}{2}$ l. long.—Pennsylvania.

Mordella atrata, Melsh. Catal.

Black, slightly ashy-sericeous, punctured as is common: antennæ black, with the four first joints dusky: elytra with the sutural striæ distinct, entire; anal style rather elongated, robust.

5. *M. nigricans*. Deep black; four basal joints of the antennæ, labrum, and palpi, dull rufous or testaceous. 1 l. long.—Pennsylvania.

Mordella nigricans, Melsh. Catal.

Deep black, sparsely ashy pubescent: antennæ — four basal joints dull rufous; labrum and palpi obsoletely dull rufous: thorax and elytra, though finely, yet distinctly punctulate and shagreened; the posterior edge of the former strongly bisinuate; the latter with the sutural striæ entire; anal style elongate, rather slender.—This is a slender species.

6. *M. fuscata*. Dark fuscous, golden sericeo-pubescent; anterior feet rufous, $1\frac{1}{2}$ l. long.—Pennsylvania.

Mordella fusca, Melsh. Catal.

Dark brown, densely dull golden pubescent, punctulate and shagreened as is common: antennæ filiform, hardly serrate, testaceous, dusky from before the middle to the tip; mouth and palpi testaceous: beneath and posterior feet blackish, glossy; two front pairs of feet dull rufous; anal style moderately elongate.

7. *M. discolor*. Head and thorax blackish; elytra reddish-brown, with the base and a lateral spot yellowish $1\frac{2}{3}$ l. long.—Pennsylvania.

Subparallel: head blackish, sparsely yellowish pubescent; antennæ filiform, fuscous, with the four first joints rufous; labrum and palpi dull testaceous, somewhat piceous: thorax blackish, pubescent as the head: scutellum densely yellowish pubescent: elytra dull reddish-brown, with the basal fourth absolutely dull rufous; an irregular basal fascia and a small lateral spot behind the middle, ochraceous: beneath, middle and hind feet blackish; fore-feet and all the ultimate tarsal joints, dull testaceous; anal style moderately elongated.

Var. a. General color of the elytra dull rufous, with a large dusky spot towards the tip, which is ochraceous-pubescent—*Mordella bifasciata*, Melsh. Catal.

Var. b. Lateral elytral spot of the type changed into a fascia.

8. *M. bihamata*. Blackish; elytra, antennæ and anterior feet, dull rufous, the first with the apex and two angulate fasciæ, ochraceous. $1\frac{2}{3}$ l. long.—Pennsylvania.

Sparsely ashy-pubescent : antennæ long, filiform, dull rufous ; mouth and palpi testaceous : thorax as the head, blackish ; short, transverse, margined with ashy pile : elytra dull reddish-brown, each with the tip and two angular spots ochraceous, the front spot behind the base, the hind one a little behind the middle ; beneath and hind femora blackish ; middle and fore-feet, and tibiæ and tarsi of hind feet dusky dull testaceous : anal style long, slender, dull testaceous at tip.

9. *M. modesta*. Blackish ; antennæ, mouth, palpi and anterior feet testaceous ; elytra dull reddish-brown, with the tip and two fasciæ ochraceous, $1\frac{1}{2}$ l. long.—Pennsylvania.

Blackish, sparsely pubescent : antennæ slender, filiform, testaceous ; mouth, palpi and anterior feet, testaceous : thorax, middle of anterior margin, lobe and edge of the hind margin, and each side of the middle with a vitta, obsoletely silvery pubescent : elytra dull reddish brown, with the apex, an oblique sinuate spot a little behind the middle, and a similar one behind the base, pale ochraceous : beneath and femora of the middle and posterior feet, blackish, their tibiæ and tarsi paler ; anal style moderately long. Differs from the preceding species, which it resembles, in being much smaller more square, and in having the elytral spots differently shaped.

10. *M. pustulata*. Blackish ; elytra dull reddish-brown, maculate with white. 1 l. long.—Pennsylvania.

Sparsely ashy-pubescent : antennæ longish, slender, filiform, brown, with the four first joints testaceous ; mouth and palpi testaceous : thorax like the head blackish, sparsely ashy pubescent, not deeply bisinuate at the basal edge : elytra dull reddish brown, with numerous, irregular white pilose spots : beneath and feet blackish ; anterior feet and all the tarsi dull testaceous ; anal style moderately long, white-sericeous at base.

11. *M. aspersa*. Blackish ; elytra obsoletely speckled with white. Size of the preceding.—Pennsylvania.

Blackish, ashy-pubescent : antennæ hardly as long as the thorax, slightly serrate, entirely black ; mouth and palpi piceous : elytra black sliding into dark reddish-brown, obsoletely sprinkled with numerous white points and irregular small spots : all the feet and beneath black ; ventral style moderate. Distinct from the preceding species.

12. *M. fuscipennis*. Rufous ; elytra fuscous. 2 l. long. Pennsylvania.

Mordella marginalis, Melsh. Catal.

Slender, yellowish-rufous, subglabrous : head very shining, almost impunctured ; antennæ filiform, not as long as the thorax, black, with the basal joints rufous ; eyes, and mandibles at tip black ; palpi and first pair of feet testaceous : scutellum rufous : elytra reddish-brown, with a violaceous reflection ; basal margin and suture obviously, lateral edge obsoletely, rufous, the two latter golden-sericeous in a particular light : beneath and feet rufous, with the tips of the tibiæ and tarsal joints black ; anal style short.

13. *M. liturata*. Rufous ; feet testaceous. $1\frac{1}{2}$ l. long. Pennsylvania.

Mordella liturata, Melsh. Catal.

Rufous : antennæ as long as the thorax, filiform, feebly serrate, testaceous :

palpi similarly colored; eyes black: thorax sparsely pubescent: elytra golden-sericeous: beneath and feet rufous or rufo-testaceous.

Sometimes dark rufous; elytra with the apex, a spot on the middle and an oblique one extending from the humerus to the suture, obsoletely pallid. Perhaps, in accordance with the name *liturata*, the type of the species.

14. *M. lutea*. Testaceous; eyes black. 1 l. long. Pennsylvania.

Testaceous-yellow: antennæ as long as the thorax, filiform, testaceous: thorax less pubescent than the elytra, not profoundly bisinuate at the basal edge: elytra rather attenuated and gaping, densely yellowish-pubescent: feet and beneath as above; tips of tibiæ and aculei of posterior ones black; anal style moderate, rather robust.

15. *M. ornata*. Testaceous; thorax and elytra fuscous, the former with a transverse band, the latter with the shoulders, testaceous. $1\frac{1}{2}$ l. long. Pennsylvania.

Slender, testaceous, sparsely pubescent: head testaceous, with the vertex and mouth, dusky; antennæ slender, filiform, as long as the thorax: eyes black; palpi testaceous; thorax short, dull reddish-brown, with a transverse, sublunate testaceous band a little behind the anterior margin, attaining with the tips nearly the anterior angles; scutel small, testaceous: elytra attenuated, very slightly gaping, with a large, triangular yellowish humeral spot; intermediate the apex and humeral spots an obsolete whitish-pubescent fascia, which is dilated on the suture: feet and beneath, rufo-testaceous, with the sides of the abdomen dusky; anal style moderate, very slender.

16. *M. limbalis*. Testaceous; disk of the thorax and a vitta on the lateral margins of the elytra, black. $1\frac{2}{3}$ l. long. Pennsylvania.

Very slender, testaceous, slightly pubescent: head testaceous, dusky between the eyes; antennæ, — base testaceous; eyes black; palpi testaceous: thorax testaceous-yellow, with a dusky oval or rather rhomboidal spot on the disk; anterior angles obsoletely dusky: elytra with lateral margins, suture and basal edge black: feet and pectus, testaceous; abdomen dusky; anal style long, very slender. It is the *Mordella limbata*, Melsh. Catal.

17. *M. discoidea*. Black: head and thorax rufous, the former with a black spot between the eyes, the latter with a similar one on the disk: elytra with the apex and two fasciæ ashy-brown. $1\frac{2}{3}$ l. long. Pennsylvania.

Pubescent: head rufous, with a large blackish spot between the eyes: antennæ and palpi, rufous, the former filiform: eyes brown or blackish: thorax color of the head, with a black spot on the middle: scutellum dusky rufous: elytra with the apex and two arcuated fasciæ, ashy-brown: beneath and posterior feet, color of the elytra or black; intermediate and anterior feet, color of the thorax; anal style moderate.

18. *M. fulvicollis*. Fuscous: head and thorax testaceous-yellow. 1 l. long. Pennsylvania.

Mordella fulvicollis, Melsh. M.S.

Slender, brown, sparsely pubescent: head and thorax testaceous-yellow: antennæ — base and palpi, testaceous: scutel minute, testaceous: elytra with the apex indeterminate pallid: beneath and posterior femora, dusky brown, with the tip of the abdomen, anal style, posterior tibiæ and tarsi, and middle and fore feet, testaceous; anal style moderate, slender.

Var. ? a. Antennæ testaceous, slightly serrate ; elytra with an obsolete, elongate yellowish basal spot, apex immaculate : tip of venter very slightly rufous.

Mordella eruciata, Melsh. M. S.

19. *M. undulata*. Blackish ; elytra with the apex and two undulated fasciæ, ashy. 1 1-5 l. long. Pennsylvania.

Mordella undulata, Melsh. Catal.

Blackish or brown, densely pubescent, with the pile mostly disposed in longitudinal lines : head obscurely maculate with ashy ; antennæ and palpi, dusky testaceous, the former short, rather serrate : thorax with the margins, and two longitudinal bands in the middle, obscurely ashy : elytra with the tip and two arcuated bands, ashy : beneath blackish ; feet and posterior edge of the postpectus, dull testaceous : anal style short, conic.

Var. a. Feet dull pale brown.

Mordella trifasciata. Testaceous, disk of the thorax and three bands on the elytra black. Say, Journ. Acad. Nat. Sci., V. 243.

Var. a. Head blackish on the front ; pectus in the middle testaceous. *Mordella pectoralis*, Melsh. M. S.

Var. b. Like variety a, with the anterior elytral band wanting.

RIPIPHORUS, Fabr.

1. *R. dubius*. Superior and posterior part of the head, thorax and tarsi dark rufous : elytra and beneath black. 4. l. long. Pennsylvania.

Ripiphorus pectinatus, Fabr. Sys. Eleuth. ii, 1195 ?

Head profoundly punctured, dark rufous with the face and eyes black : antennæ black, with the basal joints rufous : mandibles dark rufous, with the apical half black : palpi testaceous with the extreme tips dusky : thorax dark rufous densely granulate : scutellum and elytra black, the latter with a rufous tinge, and an obsolete testaceous spot behind the base : pectus and abdomen black : the former varied with obscure rufous : the latter with an obsolete rufous spot each side of the basal segment : femora black, with the tibiæ and tarsi, dark rufous. This species differs in several characters from the Fabrician description of *R. pectinatus*.

2. *R. impressus*. Black ; thorax dark rufous, strongly transversely impressed in front of the lobe : elytra testaceous, with the apex and a lateral spot black. 4 l. long. Pennsylvania.

Head profoundly punctured, glossy, obtusely rounded on the vertex : antennæ and palpi rufo-testaceous, the former with the processes dusky : thorax dark dusky rufous, densely granulate, strongly transversely impressed in front of the basal lobe, which is carinate : elytra testaceous, tinged with rufous, with the apex and an oval submarginal spot near the middle, black : beneath black : feet dull rufous.

Var. a. As in the preceding, with the thorax and femora deep black. As I possess only two specimens of this species I cannot determine which ought to constitute the type.

3. *R. maxillosus*. Dull rufous ; mandibles prominent. Size of the preceding. Pennsylvania.

Ripiphorus maxillosus, Melsh. Catal.

Head black, profoundly and rather much punctured, with the vertex obtusely

rounded; medial impunctured frontal space well defined; antennæ and palpi rufous, the former with the processes dusky; mandibles prominent, dull rufous at base, with the apical half black: thorax dark dull rufous, densely granulate, with the lobe slightly carinate, each side of which feebly indented: elytra color of the thorax: abdomen rufous: pectus black, varied with dull rufous; feet dull rufous, with the basal half of the femora blackish.

Var. a. As in the preceding, with the elytra black.

4. *R. fasciatus*. Deep black; elytra rufous, maculate with black. $2\frac{3}{4}$ l. long. Pennsylvania.

Ripiphorus fasciatus, Melsh. Catal.

Deep black: head with the vertex almost regularly rounded, punctured as is common; antennæ testaceous, with the processes dusky; palpi dull testaceous; eyes pale brown: thorax granulate, as is common, with the basal lobe feebly carinate, in front of which slightly transversely indented: elytra rufous, with the base, a large lateral spot near the middle and apex, black; the lateral spot is sometimes confluent with the tip and suture: beneath black; feet dull rufous, with the femora of the posterior ones piceous.

5. *R. ambiguus*. Black; elytra testaceous, with the tip and basal edge black. 3 l. long. Pennsylvania.

Ripiphorus bicolor, Say, Journ. Acad. Nat. Sci. iii, 275!

Deep black: antennæ testaceous, with the processes dusky: palpi dull testaceous: thorax granulate or punctured as is common, with the basal lobe slightly carinate, each side of which indented: elytra pale testaceous, with the tip and basal edge black: lateral edge dusky behind the middle: feet and beneath black.

Var. a. As the preceding, with the thorax very dark dull rufous. The name *bicolor*, has been previously applied by Olivier to another species.

6. *R. longipes*. Deep black; elytra pale testaceous, with the base, a submarginal spot and apex testaceous; feet long. $2\frac{1}{2}$ l. long. Pennsylvania.

Deep black: head with the vertex rather regularly rounded: antennæ testaceous, with the processes blackish: palpi piceous: thorax deep black, with the lateral margins obscurely rufous; basal lobe slightly carinate, and each side before the lobe obsoletely indented: elytra pale testaceous, with the base, an oblong submarginal spot and tip, black: beneath deep black: feet comparatively long and slender, dull rufous, with the femora black, piceous. Resembles much in the general color and the elytral marking of Var. a. of *impressus*, but the present species is much smaller, and the thorax differently indented.

7. *R. thoracicus*. Deep black; thorax dull rufous. $2\frac{1}{2}$ l. long. Pennsylvania.

Deep black: head shining, with the vertex obtusely rounded, blackish-rufous: antennæ black, with the basal joints testaceous: thorax dark dull rufous, with the basal edge black; basal lobe slightly carinate, acute: elytra, beneath and feet deep black, terminal tarsal joints testaceous.

Var. a. As the preceding, with the anterior third of the thorax blackish.

8. *R. niger*. Black; tarsi dull testaceous. $1\frac{3}{4}$ l. long. Pennsylvania.

Ripiphorus niger, Melsh. Catal

Black, obscurely tinged with rufous: head with the vertex rather acutely rounded: antennæ blackish: palpi —: thorax more strongly tinged with rufous than the elytra: basal lobe slightly carinate: elytra, feet and beneath black:

tarsi dull testaceous. There are doubtless specimens of this species which have the thorax rufous.

PELECOTOMA, Fisch.

P. flavipes. Black : antennæ, palpi and feet, yellowish. $2\frac{1}{4}$ l. long. Carolina.

Slender, subcylindric, subparallel, black, pubescent : antennæ brownish, with the basal joints testaceous ; palpi testaceous : thorax strongly conic : indented each side of the middle at base : elytra entire, minutely shagreened like the thorax and head : beneath blackish : feet testaceous-yellow : nails very small.

(*To be continued.*)

The following report, the conclusion of which was read at the meeting of 23d inst; was referred for publication to the Committee on Proceedings.

Examination and analyses of samples of the alluvial soil of the Nile, from Korosco, in Nubia.

By WALTER R. JOHNSON.

The specimens about to be described are the same which were on the 21st of January last presented to the Academy, by Mr. Gliddon, from Dr. Richard Lepsius of Berlin, then in Egypt, (see proceedings of the Acad. vol. 2, p. 195,) and referred to the reporter for examination.

No. I.—*Earth of the Nile taken from the summit of hillocks at thirty feet above the present level of the river about a mile above Korosko.*

This earth is partly in powder and partly in lumps. In some of the latter, distant traces of folia, or plies, marking an imperfect stratification, are to be seen. Along these seams fractures often occur. Throughout the lumps are to be observed innumerable cavities or spiracles of a tortuous form, giving the impression of having been produced by some species of vermes. Many of these are lined and some nearly filled up with carbonate of lime. Tubes of the same material are found in a separate state, and some plane surfaces are covered with it. The whole has a light spongy appearance, and, the resemblance is strengthened by the vermicular cavities, which remind one of the white tubes often found traversing masses of common sponge. Very fine micaceous particles are distributed pretty copiously through the masses, distinctly perceptible to the eye, and clearly exhibiting their forms under the lens. To the naked eye no ferruginous appearance is discernible, but the microscope shows innumerable points of a deep red colour. The mud appears to have been deposited at successive, but not very distant periods ;

while soft to have been penetrated by myriads of animalculæ; then dried and baked into a solid mass, imprisoning and destroying the animals, and forming a very porous soil, which, on subsequent exposure to water, strongly impregnated with lime, received so much of the latter as to fill up many of the pores when the water came to be dried up.

Analysis. 1. The existence of roots, stems, or of any other fibrous matter was sought for in vain in this specimen, and the magnet separates from it only minute quantities of magnetic oxide of iron.

2. Fifty grains placed in a syphon-shaped drying tube in which it was exposed to a heat of 212° for thirty minutes, and over which, during the whole time, a current of perfectly dry air, amounting in all to 200 cubic inches was passed, lost by this treatment 2.1 grains or 4.2 per cent.

3. One hundred grains of the soil were boiled for ten minutes in four or five ounces of distilled water, then filtered and washed. The insoluble residuum, separated and dried, weighed 93.5 grains, and is of a reddish grey, slightly varying in colour from the original soil. Deducting 4.2 from the loss, the part soluble in boiling water is 2.3 per cent. To the clear solution nitrate of silver imparted a slight milkiness, indicating the presence of chlorine. Chloride of barium, producing no turbidness, implied the absence of soluble sulphates. Oxalate of ammonia, gave evidence of a salt of lime soluble in boiling water. Phosphate of soda and ammonia gave no evidence of magnesia, and ferrocyanide of potassium, none of iron. The liquid slowly evaporated to dryness, left a residuum, which in the bottom of the porcelain basin separated into a yellowish ring of crenic acid, giving the usual impression, first of acidity and then of astringency to the taste, and a central portion of white crenate or carbonate of lime.

4. Another portion of one hundred grains was exposed in a platinum crucible to a dull red heat over a lamp, by which it lost 8.65 grains, showing the insoluble organic matter to be 2.15 per cent. The same portion, afterwards, exposed for fifteen minutes to a nearly white heat lost in addition 5.3 grains, and became of a light brick red colour.

5. A third portion of one hundred grains finely pulverized was placed in a green glass flask. An ounce of distilled water was poured over it, and an open-mouthed tube containing chlorhydric acid was inserted; the mouth closed with a cork traversed by a small glass tube surmounted by a tube containing chloride of calcium. The whole being carefully counterpoised, the acid was by degrees decanted and allowed to act on the soil. Heat was cautiously applied near the close of the operation, bringing the liquid at length to gentle ebullition, but taking care that no pure steam entered the chloride tube. On cooling the apparatus, the air was allowed to pass through a second chloride tube attached to the first, thus avoiding the hygrometric moisture of the air. When the whole apparatus had become cool, heat was again applied and the boiling and cooling repeated with the same precautions, until, on re-weighing, no loss was found to occur between one boiling and another. The final loss of carbonic acid was thus ascertained to be 5.55 per cent.

6. Having withdrawn the cork from the flask, more chlorhydric acid was added, and the boiling continued until every thing soluble had been taken up.

The undissolved residuum filtered, washed, and ignited weighing 63.55 grains. It is a powder of a lighter grey than the original soil. Minute particles of white quartz, and some with a reddish tint are discernible by the help of a lens.

7. The solution filtered from the above residuum was treated with sulphydric acid, to ascertain whether lead, copper, mercury, tin, antimony, or arsenic, existed in the soil. A reddish white tint, indicative of a bare trace of antimony, was all which could be procured. The liquid smelling strongly of sulphydric acid, the sulphur was separated, and then the solution was neutralized with pure ammonia.

8. Sulphhydrate of ammonia was added, throwing down a copious precipitate of sulphuret of iron and alumina, which was filtered out, redissolved in chlorhydric acid, with a little nitric, and boiled to peroxidize the iron; the solution was then precipitated and boiled with pure potash, separating the iron, which being ignited, weighed in the state of peroxide 8.07 grains.

9. Having acidulated the potash liquid, it was precipitated by ammonia and gave of ignited alumina 2.64 grains.

10. The solution, filtered from the sulphurets, was concentrated, treated with chlorhydric acid, the precipitated sulphur separated, and after neutralizing by ammonia, was precipitated with oxalate of ammonia, allowed to repose 18 hours, then heated and filtered. The oxalate of lime thus obtained, was, after ignition, repeatedly moistened with a solution of carbonate of ammonia, and re-ignited till it ceased to gain weight. The carbonate of lime was 12.6 grains.

11. Ammonio-phosphate of soda applied to the liquid filtered from the oxalate of lime, after the same had been duly concentrated, entirely cooled and neutralized by pure ammonia, threw down ammonio-phosphate of magnesia, which, separated and ignited, gave of phosphate of magnesia, 5.15 grains, equal to 2.06 grains of magnesia, or 4.25 of its carbonate.

From the preceding operations we obtain the following composition of this soil, viz :

	per cent.
Water obtained at 212°	4.20
Organic matter soluble in boiling water,	2.30
Insoluble organic matter,	2.15
Peroxide of iron,	8.07
Alumina,	2.64
Carbonic acid,	5.55
Magnesia,	2.06
Lime,	7.11
Insoluble silicates,	63.55
Loss,	2.37
	<hr/> 100.

No. 2.—Specimen of the present soil of the Valley of Korosco, taken at a height of three feet above the Nile.

This earth is also partly in lumps and partly in powder. The former exhibit no marks of stratification, and so far as can be observed, have no tendency to part in one direction more than in another. The texture is open and porous, but the pores are not filled as in No. 1, with any deposit of white matter, except here and there a rather light gray in the interior of the cavities. In some of the lumps, minute rootlets are seen traversing the mass in different directions. The color of this soil is considerably darker than that of No. 1, due in part no doubt to the absence of carbonate of lime. Ferruginous particles abound in this, as in the preceding specimen, but those of mica are of far less frequent occurrence.

Time has allowed me to make but a few trials to ascertain the composition of this soil, as it was believed to be of more interest to determine the relative characters of the oldest and of the most recent ones, rather than that of an intermediate period. By twice drying in the inverted syphon apparatus, and in the last instance passing over it 200 cubic inches of air, thoroughly dry, it lost 2.6 per cent. By treatment in the apparatus for separating carbonic acid, and boiling five times successively to expel the last atom of that material, using a solution of pure baryta to ascertain when the escaping air, expelled in boiling, ceased to be mixed with that acid, it was found that the amount of carbonic acid was only 1.7 per cent. equivalent to 3.9 per cent. of carbonate of lime. On separating the soil with the sieve, the finest portion—that passing through the gauze sieve—was found to afford decidedly more magnetic oxide of iron, than specimen No. 1.

No. 3.—Specimen of the earth newly deposited at Korosco, the 18th of August, 1844.

This specimen is entirely in powder, and of a color very nearly approaching that of No. 2.

Particles of mica are of rather rare occurrence. A few minute fragments of straw or grass are detected, and by a gauze sieve, of which the meshes are 100 to the inch, and the spaces to the threads as $2\frac{1}{4}$ to 1 in diameter, making the open spaces $\frac{7}{1000}$ of an inch square only, 22 per cent. of this earth was arrested. A quantity of very fine fibrous or downy matter was also collected by the sieve. Portions of both the coarser and the finer parts of this soil are attracted by the magnet, 4-tenths of one per cent. being found in an average portion of it. On being washed, the coarser part is found to be a sand, composed of quartz, red and white, fragments of schorl, and garnets, of magnetic oxide of iron, a little mica, and a few fragments of tubes, such as are seen traversing the older portions of soil already examined. This composition indicates that this specimen has resulted from the decomposition of primitive rocks, and that their debris has been mixed with some portion of the anterior deposits along the river banks.

Analysis.

1. Dried 100 grains and found the loss, 3.7 grains.
2. Transferred the same to a well closed platinum crucible, and ignited; which

caused an additional loss of 3.57 per cent. The powder having now a dull red-dish gray color, was again heated, and with access of air, stirring occasionally with a platinum spatula, to facilitate the complete combustion of organic matter.

By this treatment the additional loss was .13 grain, showing the organic matter in the soil to be 3.70 per cent. To ascertain what part of this matter was soluble, a second portion of 100 grains was placed in a green glass matras and boiled for an hour, with three ounces of a saturated solution of carbonate of ammonia; the clear liquid was decanted, and a second portion of the carbonate added, boiling as before, and in the same way a third portion was subsequently added. The solution being acidulated with acetic acid, acetate of lead was applied, producing when dried, 4.7 grains of crenate of lead, equivalent to 2.28 grains of crenic acid, and showing the insoluble organic matter to be 1.42 grains.

3. Placed the reddened powder of the first 100 grains in a matras, and poured over it an ounce of pure water and half an ounce of pure chlorhydric acid; boiled half an hour, decanted the clear liquid, put in another ounce of water and half ounce of acid, boiled for the same length of time, decanted once more and repeated the operation—then filtered, washed carefully, ignited and weighed the residue, found it 70.2 grains, showing that 22.4 grains of matter have been dissolved by the acid

4. The solution in chlorhydric acid, reduced to a convenient bulk, was boiled with a little nitric acid, to peroxidize the iron, by which it was changed from greenish yellow to a fine deep red color, and while still hot, precipitated with pure ammonia, boiled to condense the precipitate, filtered, washed for more than 24 hours, and until all alkaline reaction ceased.

5. The precipitate was boiled in a strong solution of caustic potash, until the clear liquid yielded with chlorhydric acid the usual indications of a sufficient excess of alkali.

6. The remaining precipitate of oxide of iron was filtered and washed for 12 hours, with hot water, separated, dried, and ignited sufficiently long to reduce the whole to the state of peroxide, which then weighed 9.18 grains.

7. The potash solution was acidulated with chlorhydric acid, and precipitated by carbonate of ammonia, yielding, after being thoroughly washed, dried and ignited, 6.55 grains of alumina.

8. The ammoniacal solution filtered from oxide of iron and alumina, was treated for phosphate of lime, and afterwards with oxalate of ammonia, and, allowing ample time to precipitate, the oxalate of lime was filtered, washed, converted into carbonate, and in that state weighed, giving 6.7 grains. Converted this, by exposure three times to a white heat, into *caustic lime*, weighing exactly 3.8 grains.

9. The liquid from which oxalate of lime had been filtered, was now with the usual precautions precipitated with ammonio-phosphate of soda, the precipitate cautiously washed, and the double phosphate ignited, giving phosphate of magnesia 5.18 grains, equivalent to 1.89 grains of *magnesia*.

10. To the liquid filtered from ammonio-phosphate of magnesia, added sulph.

hydrate of ammonia, and obtained calcined precipitate from the .3 grain of oxide of manganese.

11. A third portion of 100 grains of the soil, treated for *carbonic acid* with all the precautions of boiling the liquid, and alternately cooling off ten times, until the pure baryta showed no more carbonic acid, and the successive weighings gave identical results, the quantity of that ingredient was found to be only 1.4 grains. Hence the soil is composed of

Moisture,	-	-	-	-	3.70	per ct.
Carbonic acid,	-	-	-	-	1.40	
Organic matter,	-	-	-	-	3.70	viz: } Soluble 2.28
						Insoluble 1.42
Insoluble silicates,	-	-	-	-	70.20	
Oxide of iron,	-	-	-	-	8.76	
Alumina,	-	-	-	-	6.55	
Lime,	-	-	-	-	3.80	
Oxide of manganese,	-	-	-	-	.30	
Magnesia,	-	-	-	-	1.89	
Phosphate of lime,	-	-	-	-	.15	
<hr/>						
100.45						

The excess is here attributable in part to the peroxidation of the iron, which in the soil is partly in the state of magnetic oxide, and in part to the presumed slight amount of potash still adhering to the oxide and alumina.

Sand taken from the thermal spring at Okme, on the Southern frontier of the Province of Butir-el-Hagar, on the Western bank of the Nile—where the temperature of the water is 131° Fah.

This sand obviously contains the debris of granitic rocks. Particles of quartz and mica are very abundant, and the magnet takes up a notable portion of magnetic oxide of iron. Particles of highly ferruginous clay are interspersed among it, resembling crumbs of bog iron ore, and leading to the supposition that the heat of the spring is occasioned by the decomposition of pyritous rocks, whose insoluble debris it brings in minute portions to the surface. The gauze sieve already mentioned retains 25 per cent. of this sand, including nearly all the particles of ferruginous clay. The portion which passes the seive, resembles, in almost every particular, the sandy portion washed out of the newly deposited soil, except of course the different degree of its fineness. Both have particles of red and white quartz, both show magnetic oxide of iron, the sand of the spring in the greater abundance. It is remarked that the particles of this oxide in the portion of sand which passes the sieve, is far greater than in that which remains upon it, which we might anticipate, on the supposition that the sand is brought up by the spring. The greater specific gravity of the particles of oxide than that of the quartz, would allow larger masses of the latter than of the former to be thrown up by a current of given velocity.

Bringing together the results of the analysis of the ancient and that of the most recent soil, we find the following composition in 100 parts.

	Ancient soil.	Recent deposite.
Water, - - - - -	4.20	3.70
Soluble organic matter, - - - - -	2.30	2.8
Insoluble organic matter, - - - - -	2.15	1.42
Peroxide of iron, - - - - -	8.07	8.76
Alumina, - - - - -	2.69	6.55
Lime, - - - - -	7.11	3.80
Magnesia, - - - - -	2.06	1.89
Carbonic acid, - - - - -	5.55	1.40
Insoluble silicates, - - - - -	63.55	70.20
Loss, - - - - -	2.37 Ox. of Manganese	.30
	— Phosphate of lime	.15
	100	100.45

The *loss* in the analysis of the ancient soil, is attributed in part to the combined water, which no doubt existed in the peroxide of iron, and in part to the chloride of sodium and phosphate of alumina, of which some traces were observed, but of which time did not allow me to make a minute examination, or to repeat the analysis for the purpose of an exact determination of their proportion. The most striking difference between the ancient and the modern soils is to be found in the far higher proportion of carbonic acid, lime, and magnesia in the former, and the greater abundance of alumina and of insoluble silicates in the latter. The matter soluble in water is nearly the same for both, and the oxide of iron not widely different.

The Monthly Report of the Corresponding Secretary, and the Annual Report of the Recording Secretary, were read and adopted.

The Annual Report of the Treasurer was read and referred to the Auditors.

On motion of Professor Johnson, Resolved, that the Recording Secretary be directed to make out a new and corrected list of Members and Correspondents of the Institution, with a view to publication.

On motion of Mr. Vaux, Resolved, that the Corresponding Secretary be authorised to transmit to Correspondents, copies of the Catalogue of the Library, as occasion may offer.

After the transaction of some other business, the Society went into an election for Officers for the year 1846. The following result was reported by the tellers :—

PRESIDENT.

William Hembel.

VICE PRESIDENTS.

J. Price Wetherill,
Samuel George Morton, M. D.

CORRESPONDING SECRETARY.

Walter R. Johnson.

RECORDING SECRETARY.

William S. Zantzinger, M. D.

LIBRARIAN.

Joseph Leidy, M. D.

TREASURER.

George W. Carpenter.

CURATORS.

William S. Vaux,
Samuel Ashmead,
John Cassin,
John K. Townsend.

AUDITORS.

Robert Pearsall,
William S. Vaux,
Robert Bridges, M. D.

PUBLICATION COMMITTEE.

William S. Vaux,
Walter R. Johnson,
Samuel Ashmead,
A. E. Jessup,
William Gambel.

ELECTION OF CORRESPONDENT.

J. C. M. Boudin, M. D., Surgeon in chief to the Hospital of Versailles, France, was elected a Correspondent.